AIR QUALITY ANALYSIS

Aten Road and Dogwood Road

Prepared for:

California Department of Transportation
District 11
4050 Taylor Street
San Diego, California 92101

Prepared by:

Scientific Resources Associated
1328 Kaimalino Lane
San Diego, CA 92109

March 29, 2012

TABLE OF CONTENTS

Section **Page**

LIST OF FIGURES

Figure **Page**

LIST OF TABLES

Table **Page**

CHAPTER 1.0
INTRODUCTION

1.1 INTRODUCTION

The project proposes improvements that will involve installation of new traffic signals and intersection improvements along the Aten Road and Dogwood Road intersection in the City of Imperial. The intersection of Aten Road and Dogwood Road is presently controlled by stop signs on each approach. Aten Road is an east/west four-lane roadway with a left turn channelization at Dogwood Road. Aten Road is a major east/west roadway through the City of Imperial with connection to SR-111 to the east of Dogwood Road. Within the City of Imperial Aten Road is Master Planned as four-lane Major Arterial.

Dogwood Road is presently constructed as a two-lane north/south highway from the City of Brawley located to the north of Aten Road to Interstate 8 in the City of El Centro. Both roadways provide local and through traffic.

The purpose of this air quality analysis is to describe the existing regional and local air quality of the project area, identify the potential air quality impacts of the proposed project, and demonstrate air quality conformity of the project with the State Implementation Plan (SIP), as required by the federal Clean Air Act (CAA). This report also identifies measures to mitigate or minimize pollutant emissions that could occur during project construction.

1.2 SUMMARY

The project site is located in Imperial County, in the Salton Sea Air Basin (SSAB), which currently meets federal standards for all criteria air pollutants, except ozone (O_3), particulate matter sized 10 microns or less (PM_{10}), and particulate matter sized 2.5 microns or less ($PM_{2.5}$). Imperial County has been designated as a moderate nonattainment area for the 8-hour O_3 standard. Imperial County is also designated as a serious nonattainment area for PM_{10}. The City of Imperial, and the project site, are located in the portion of Imperial County that has been designated a nonattainment area for the 2006 standard for $PM_{2.5}$. Table 1 shows the pollutants for which the area has been classified federal nonattainment or maintenance and the number of violations within the past three years.

Imperial County meets California standards for all criteria air pollutants, except O_3, PM_{10}, and

$PM_{2.5}$. Therefore, Imperial County has been designated as a California nonattainment area for O_3 and PM_{10}. The state has not yet issued a nonattainment status for $PM_{2.5}$.

mapquest

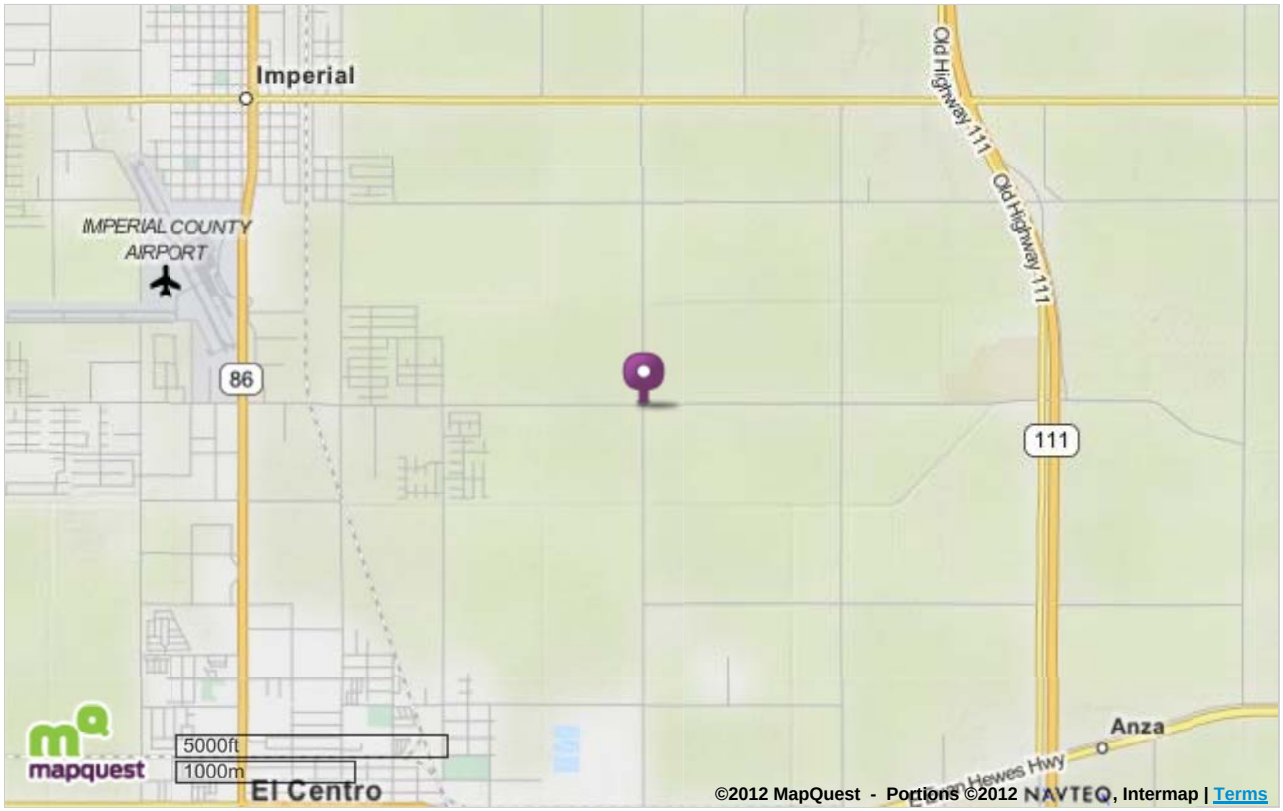
Map of:

E Aten Rd & Dogwood Rd

Imperial, CA 92251

Notes

Figure 1. Regional Location Map



mapquest

Map of:

E Aten Rd & Dogwood Rd

Imperial, CA 92251

Notes

Figure 2. Project Vicinity Map

Table 1
Federal Nonattainment and Attainment/Maintenance Pollutants in Imperial County

Pollutant	Federal Attainment Status	Exceedances in the Last 3 Years
O_3 – 8-hour	Moderate Nonattainment	1 in 2008; 0 in 2009; 0 in 2010
PM_{10}	Serious Nonattainment	0 in 2008; 2 in 2009; 0 in 2010
$PM_{2.5}$	Nonattainment	0 in 2008; 1 in 2009; 0 in 2010

Source: ARB 2012a,b, USEPA 2012.
Note: ARB indicates that exceedances are not necessarily violations.

The federal CAA requires that areas designated as nonattainment or maintenance areas demonstrate that federal actions conform to the SIP and similar approved plans. Transportation measures, such as the proposed project, are analyzed for conformity with the SIP as part of regional transportation plans (RTP) and regional transportation improvement programs (RTIP). Table 2 identifies the status of the SIP.

Table 2
Status of State Implementation Plan in Imperial County

Pollutants	Status
Ozone (O_3)	In July 1997, the U.S. Environmental Protection Agency (USEPA) established a new federal 8-hour standard for O_3 of 0.080 parts per million (ppm). The USEPA designated 15 areas in California that violate the federal 8-hour O_3 standard on April 15, 2004. Each nonattainment area's classification and attainment deadline is based on the severity of its O_3 problem. Imperial County was required to develop an 8-hour Ozone Modified Air Quality Management Plan in July, 2010, which was submitted to the ARB for inclusion in the California SIP. The Plan was submitted to the USEPA on December 21, 2010 for review and approval.
Particulate Matter (PM_{10})	In August 2004 the USEPA found that the Imperial Valley PM_{10} nonattainment area had failed to attain by the moderate area attainment date of December 31, 1994, and as a result reclassified the Imperial Valley from a moderate to a serious PM_{10} nonattainment area. The USEPA proposed a rule to find that the area had failed to attain the annual and 24-hour PM_{10} standards by the serious area deadline of December 31, 2001. The USEPA required the County to submit an air quality plan by December 11, 2008. Imperial County has prepared a Final Imperial County 2009 PM_{10} SIP dated August 11, 2009, which accounts for revised transportation conformity budgets.

Source: ICAPCD 2012

The metropolitan planning organization responsible for the preparation of regional transportation plans and the associated air quality analyses is the Southern California Association of Governments (SCAG). The current applicable regional transportation plan is the Federal

Statewide Transportation Improvement Program (FSTIP). The most recently approved FSTIP is the 2011 Final Statewide Transportation Improvement Program, Covering Federal Fiscal Years 2010/11 through 2013/14 (Caltrans 2011). A proposed project needs to be identified in the FSTIP to conform to the SIP.

The proposed project is included within the Federal State Transportation Improvement Program under grouped projects for safety improvements – HSIP program projects consistent with 40 CFR Part 93.126 Tables 2 and 3 Categories – Railroad/Highway Crossing, Safer on-Federal-Aid system roads, shoulder improvements, traffic control devices and operating assistance other than signalization projects, intersection signalization projects at individual intersections, pavement marking demo. The Project is included in Amendment 9 of the FSTIP (an administrative modification), which was approved by SCAG on June 8, 2011, and approved by the state on June 10, 2011. Since administrative modifications do not require FHWA approval, the state adopted Amendment 9 in the FSTIP. The Project is an intersection signalization project at an individual intersection. The Project is also listed in the SCAG Federal Transportation Improvement Program (FTIP) as Project SCAG015. The 2011 FTIP received federal approval on December 14, 2010.

The proposed project would involve construction. A discussion of construction emissions, potential impacts, and measures to avoid or minimize the impacts is included in this analysis. Recommended pollution abatement measures are included in the analysis. All Department standard specifications for construction mitigation, including measures in the state implementation plan and air district rules, will be implemented.

1.3 PROJECT DESCRIPTION

This project will consist of the installation of traffic signals, at the intersection of Aten Road and Dogwood Road. All project work will be done within public right of way (Imperial County Right of Way).

CHAPTER 2.0
AIR POLLUTANTS

"Air Pollution" is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Individual air pollutants may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation.

Seven air pollutants have been identified by the USEPA as being of concern nationwide: carbon monoxide (CO); ozone (O_3); nitrogen dioxide (NO_2); PM_{10}, also called respirable particulate and suspended particulate; $PM_{2.5}$; sulfur dioxide (SO_2); and lead. These pollutants are collectively referred to as criteria pollutants. The sources of these pollutants, their effects on human health and the nation's welfare, and their final deposition in the atmosphere vary considerably.

In Imperial County, ambient concentrations of CO, O_3, and lead are primarily influenced by motor vehicle activity. Emissions of sulfur oxides (SO_X) are associated mainly with various stationary sources. Emissions of nitrogen oxides (NO_X) and particulate matter come from both mobile and stationary sources.

The criteria pollutants that are most important for this air quality impact analysis are those that can be traced principally to motor vehicles and to earth-moving activities. Of these pollutants, CO, NO_X, and PM_{10} are evaluated on a regional or "mesoscale" basis. CO is often analyzed on a localized or "microscale" basis in cases of congested traffic conditions. Although PM_{10} and $PM_{2.5}$ have very localized effects, there is no USEPA-approved methodology to evaluate microscale impacts of PM_{10} and $PM_{2.5}$.

In addition to the seven criteria air pollutants, toxic air contaminants including mobile source air toxics are discussed below.

2.1 CARBON MONOXIDE (CO)

CO is a colorless and odorless gas which, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the severest meteorological and traffic conditions, high

concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Overall, CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO concentrations are typically higher in winter. As a result, California has required the use of oxygenated gasoline in the winter months to reduce CO emissions.

2.2 OZONE (O_3)

O_3 is the principal component of smog and is formed in the atmosphere through a series of reactions involving reactive organic gases (ROG) and NO_X in the presence of sunlight. ROG and NO_X are called precursors of O_3. NO_X includes various combinations of nitrogen and oxygen, including nitrogen oxide (NO), NO_2, NO_3, etc. O_3 is a principal cause of lung and eye irritation in the urban environment. Significant O_3 concentrations are normally produced only in the summer, when atmospheric inversions are greatest and temperatures are high. ROG and NO_X emissions are both considered critical in O_3 formation. Control strategies for O_3 have focused on reducing emissions from vehicles, industrial processes using solvents and coatings, and consumer products.

2.3 NITROGEN DIOXIDE (NO_2)

NO_2 is a product of combustion and is generated in vehicles and in stationary sources such as power plants and boilers. NO_2 can cause lung damage. As noted above, NO_2 is part of the NO_X family and is a principal contributor to O_3 and smog. In 2007, the ARB reduced the 1-hour average standard for NO_2 to 0.18 parts per million (ppm) and established a new annual standard of 0.030 ppm.

2.4 RESPIRABLE PARTICULATE MATTER (PM_{10})

Particulate matter includes both liquid and solid particles of a wide range of sizes and composition. While some PM_{10} comes from automobile exhaust, the principal sources in Imperial County include windblown dust, dust from construction, agricultural activities, and from the action of vehicle wheels on paved and unpaved roads. In other areas, agriculture, wind-blown sand, and fireplaces can be important sources. PM_{10} can cause increased respiratory disease, lung damage, and premature death. Control of PM_{10} is achieved through the control of dust at construction sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads. The USEPA revised the NAAQS for PM_{10} in 2006, eliminating the annual standard.

2.5 FINE PARTICULATE MATTER ($PM_{2.5}$)

The sources, health effects, and control of $PM_{2.5}$ are similar to those of PM_{10}. In 1997, the USEPA determined that the health effects of $PM_{2.5}$ were severe enough to warrant an additional standard, and standards for $PM_{2.5}$ became effective on September 15, 1997. The U.S. Supreme Court affirmed the standards, and policies and systems to implement these new standards. Formal attainment classifications for $PM_{2.5}$ were formally published on December 17, 2004, by the USEPA.

On June 20, 2002, the ARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by the ARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current state standards during some part of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide ranging. Based upon a desire to set clean air goals throughout California, the ARB created a new annual average standard for $PM_{2.5}$ at 12 micrograms per cubic meter ($\mu g/m^3$). The USEPA revised the NAAQS for $PM_{2.5}$ in 2006, reducing the 24-hour standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$.

2.6 SULFUR DIOXIDE (SO_2)

SO_2 is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. The health effects of SO_2 include lung disease and breathing problems for asthmatics. SO_2 in the atmosphere contributes to the formation of acid rain. In Imperial County, there is relatively little use of coal and oil; therefore, SO_2 is of lesser concern than in many other parts of the country.

2.7 LEAD

Lead is a stable compound that persists and accumulates both in the environment and in animals. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. The USEPA began working to reduce lead emissions soon after its inception, issuing the first reduction standards in l973, which called for a gradual phase down of lead to one tenth of a gram per gallon by 1986. The average lead content in gasoline in 1973 was 2 to 3 grams per gallon or about 200,000 tons of lead per year. In 1975, passenger cars and light trucks were manufactured with a more elaborate emission control system, which included a

catalytic converter that required lead-free fuel. In 1995, leaded fuel accounted for only 0.6 percent of total gasoline sales and less than 2,000 tons of lead per year. Effective January 1, 1996, the federal CAA banned the sale of the small amount of leaded fuel that was still available in some parts of the country for use in on-road vehicles (USEPA 1996). Lead emissions have significantly decreased due to the near elimination of the use of leaded gasoline.

2.8 TOXIC AIR CONTAMINANTS

In addition to the criteria air pollutants, USEPA regulates toxic air contaminants (TAC), also known as hazardous air pollutants. Concentrations of TACs are also used as indicators of ambient-air-quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. This contrasts with the criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established. Most TACs originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Air toxics are air pollutants that cause adverse health effects. The USEPA has focused most of its air toxics efforts to date on carcinogens, which are compounds that cause cancer; however, non-cancer health effects such as reproductive and neurological problems are also of concern to USEPA. Motor vehicles emit several pollutants that USEPA classifies as known or probable human carcinogens. Benzene, for instance, is a known human carcinogen, while formaldehyde, acetaldehyde, 1,3-butadiene and diesel particulate matter are probable human carcinogens. Studies are underway to determine whether other toxic substances are present in mobile source emissions.

The USEPA estimates that mobile source (vehicles) air toxics account for as much as half of all cancers attributed to outdoor sources. This estimate is not based on actual cancer cases, but on models that predict the maximum number of cancers that could be expected from current levels of exposure to mobile source emissions. The models consider available health studies, air quality data, and other information about the types of vehicles and fuels currently in use. Non-road mobile sources, such as tractors and snowmobiles, also emit air toxics.

Some toxic compounds are present in gasoline and are emitted to the air when gasoline evaporates or passes through the engine as unburned fuel. Benzene, for example, is a component of gasoline. A significant amount of automotive benzene comes from the incomplete combustion of compounds in gasoline such as toluene and xylene that are chemically very similar to benzene. Like benzene itself, these compounds occur naturally in petroleum and become more concentrated when petroleum is refined to produce high-octane gasoline. Formaldehyde, acetaldehyde, diesel particulate matter, and 1,3-butadiene are not present in fuel but are by-products of incomplete combustion. Formaldehyde and acetaldehyde are also formed through a secondary process when other mobile source pollutants undergo chemical reactions in the atmosphere.

Mobile Source Air Toxics (MSATs)

The Clean Air Act identified 188 TACs. The EPA has assessed this expansive list of toxics and identified a group of 21 TAC's as Mobile Source Air Toxics (MSATs), which are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. The USEPA also extracted a subset of this list of 21 MSAT's that it now labels as the seven priority MSATs. These are *benzene, formaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, 1,3-butadiene, naphthalene, and polycyclic organic matter (POM)* (FHWA 2009). While these MSATs are considered the priority transportation toxics, the USEPA stresses that the lists are subject to change and may be adjusted in future rules (FHWA 2009).

The EPA has issued a number of regulations that will dramatically decrease MSATs through cleaner fuels and cleaner engines. According to an FHWA analysis, even if the number of vehicle miles traveled increases by 64 percent, reductions of 57 percent to 87 percent in MSATs are projected from 2000 to 2020. Project MSAT impacts are discussed in Section 5.1 of this report.

Diesel Exhaust Particulate

In 1999, the ARB identified particulate emissions from diesel-fueled engines as a TAC. Once a substance is identified as a TAC, the ARB is required by law to determine if there is a need for further control. This is referred to as risk management (ARB 2006). The process of further

studies is ongoing at the ARB, with committees meeting to analyze both stationary and mobile diesel engine sources, as well as many other aspects of the problem. In October 2000, the ARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* and *the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* (ARB 2000a and 2000b). ARB programs in progress relating to truck emissions are included in the following paragraphs. There are other programs for risk reduction for off-road diesel engines.

In February 2001, the USEPA issued new rules requiring cleaner diesel fuels in 2006 and beyond. However, since 1993 California's regulations have required cleaner diesel fuel than the federal requirements. The 1993 federal regulations reduced particulate emissions by 5 percent, while the California regulations reduced particulate emissions by 25 percent.

The control of emissions from mobile sources is a statewide responsibility of the ARB that has not been delegated to the local air districts. However, the Imperial County APCD is participating in the administration programs to reduce diesel emissions, principally by procurement and use of replacement vehicles powered by natural gas.

Some air districts have issued preliminary project guidance for projects with large or concentrated numbers of trucks, such as warehouses and distribution facilities. No standards exist for quantitative impact analysis for diesel particulates.

2.9 ASBESTOS

The federal CAA requires the USEPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. In accordance with federal CAA Section 112, the USEPA established National Emissions Standards for Hazardous Air Pollutants (NESHAP) to protect the public. Asbestos was one of the first hazardous air pollutants regulated under this section. On March 31, 1971, the USEPA identified asbestos as a hazardous pollutant, and on April 6, 1973, first promulgated the asbestos NESHAP in 40 CFR Part 61. In 1990, a revised NESHAP regulation was promulgated by the USEPA.

The asbestos NESHAP regulations protect the public by minimizing the release of asbestos fibers during activities involving the processing, handling, and disposal of asbestos-containing material. Accordingly, the asbestos NESHAP specifies work practices to be followed during demolitions and renovations of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). In addition, the regulations require the project

applicant to notify applicable state and local agencies and/or USEPA regional offices before all demolitions or before construction that contains a certain threshold amount of asbestos.

Naturally Occurring Asbestos (NOA) -bearing Serpentine

Serpentine is a mineral commonly found in seismically active regions of California, usually in association with ultramafic rocks and along associated faults. Certain types of serpentine occur naturally in a fibrous form known generically as asbestos. Asbestos is a known carcinogen and inhalation of asbestos may result in the development of lung cancer or mesothelioma. The ARB has regulated the amount of asbestos in crushed serpentinite used in surfacing applications, such as for gravel on unpaved roads, since 1990. In 1998, new concerns were raised about health hazards from activities that disturb asbestos-bearing rocks and soil. In response, the ARB revised their asbestos limit for crushed serpentines and ultramafic rock in surfacing applications from 5 percent to less than 0.25 percent, and adopted a new rule requiring best practices dust control measures for activities that disturb rock and soil containing NOA (CDC 2000).

According to the report "A General Location Guide for Ultramafic Rocks in California-Area Likely to Contain Naturally Occurring Asbestos" (CDC 2000), within Imperial County NOA is not typically found in the geological formations present on the proposed project site (CDC 2000). Thus, hazardous exposure to asbestos-containing serpentine materials would not be a concern with the proposed project.

This page intentionally left blank.

CHAPTER 3.0
APPLICABLE STANDARDS

3.1 FEDERAL AND STATE STANDARDS

The federal CAA (42 U.S.C. §§ 7401-7671q) requires the adoption of national ambient air quality standards (NAAQS) to protect the public health and welfare from the effects of air pollution. The NAAQS have been updated as needed. Current standards are set for SO_2, CO, NO_2, O_3, PM_{10}, $PM_{2.5}$, and lead. The ARB has established the California Ambient Air Quality Standards (CAAQS) that are generally more restrictive than the NAAQS and include additional pollutants. The federal and California air quality standards are shown in Table 3.

3.2 REGIONAL AUTHORITY

In Imperial County, the Imperial County APCD is the agency responsible for the administration of federal and California air quality laws, regulations, and policies. The APCD's tasks include the monitoring of air pollution, the preparation of the SIP for Imperial County, and the promulgation of "The Rules and Regulations" of the SIP. The SIP includes strategies and tactics to attain the federal O_3 standard. The Rules and Regulations include procedures and requirements to control the emission of pollutants and to prevent adverse air quality impacts.

The APCD does not have quantitative emissions limits for construction activities, nor for long-term emissions that may result from increased vehicle use.

One APCD regulation is application to construction of the proposed project; Regulation VIII, which regulates emissions of fugitive dust. Regulation VIII includes the following specific rules:

- Rule 800 – Fugitive Dust Requirements for Control of Fine Particulate Matter (PM_{10})
- Rule 801 – Construction and Earthmoving Activities
- Rule 802 – Bulk Materials
- Rule 803 – Carry Out and Track Out
- Rule 804 – Open Areas
- Rule 805 – Paved and Unpaved Roads
- Rule 806 – Conservation Management Practices

The project is required to comply with these rules, and conformance will be incorporated into project specifications and procedures.

Table 3
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS[1]		CAAQS[2]
		Primary[3]	Secondary[4]	Concentration[5]
Ozone (O_3)[6]	1-Hour	-	Same as Primary Standard	0.09 ppm (180 µg/m^3)
	8-Hour	0.08 ppm (157 µg/m^3)		0.070 ppm (137 µg/m^3)[9]
Carbon Monoxide (CO)	8-Hour	9 ppm (10 mg/m^3)	None	9.0 ppm (10 mg/m^3)
	1-Hour	35 ppm (40 mg/m^3)		20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 µg/m^3)	Same as Primary Standard	0.030 ppm (56 µg/m^3)[10]
	1-Hour	0.100 ppm (188 µg/m^3)		0.18 ppm (338 µg/m^3)[10]
Sulfur Dioxide (SO_2)	24-Hour	-	-	0.04 ppm (105 µg/m^3)
	3-Hour	-	0.5 ppm (1300 µg/m^3)	-
	1-Hour	75 ppb (196 µg/m^3)	-	0.25 ppm (655 µg/m^3)
Suspended Particulate Matter (PM_{10})[7]	24-Hour	150 µg/m^3	Same as Primary Standard	50 µg/m^3
	Annual Arithmetic Mean	Revoked		20 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)[8]	24-Hour	35 µg/m^3	Same as Primary Standard	-
	Annual Arithmetic Mean	15 µg/m^3		12 µg/m^3
Lead (Pb)	30-Day Average	-	-	1.5 µg/m^3
	Calendar Quarter	1.5 µg/m^3	Same as Primary Standard	-
	3-Month Rolling Average	0.15 µg/m^3	Same as Primary Standard	-
Hydrogen Sulfide (H_2S)	1-Hour	No Federal Standards		0.03 ppm (42 µg/m^3)
Sulfates (SO_4)	24-Hour			25 µg/m^3
Visibility Reducing Particles	8-Hour (10 am to 6 pm, Pacific Standard Time)			In sufficient amount to produce an extinction coefficient of 0.23 per km due to particles when the relative humidity is less than 70 percent.
Vinyl chloride[9]	24 Hour			0.01 ppm (26 µg/m^3)

[1] NAAQS (other than O_3, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the USEPA for further clarification and current federal policies.

[2] California Ambient Air Quality Standards for O_3, CO (except Lake Tahoe), SO_2 (1- and 24-hour), NO_2, PM_{10}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.

[3] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[4] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[5] Concentration expressed first in units in which it was promulgated. Ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas.

[6] On June 15, 2005 the 1-hour ozone standard was revoked for all areas except the 8-hour ozone nonattainment Early Action Compact Areas (those areas do not yet have an effective date for their 8-hour designations). Additional information on federal ozone standards is available at http://www.epa.gov/oar/oaqps/greenbk/index.html.

[7] Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the USEPA revoked the annual PM_{10} standard on December 17, 2006.

[8] Effective, December 17, 2006, the USEPA lowered the $PM_{2.5}$ 24-hour standard from 65 µg/m^3 to 35 µg/m^3.

[9] The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[10] The nitrogen dioxide ambient air quality standard was amended on February 22, 2007, to lower the 1-hr standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. These changes become effective after regulatory changes are submitted and approved by the Office of Administrative Law, expected later this year.

ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter
Source: USEPA 2012; ARB 2012c.

3.3 CONFORMITY OF FEDERAL ACTIONS

Section 176(c) of the federal CAA requires:

> No department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity which does not conform to an implementation plan after it has been approved …
>
> Conformity to an implementation plan means:
>
> (A) conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and
>
> (B) that such activities will not:
>
> (i) cause or contribute to any new violation of any standard in any area;
> (ii) increase the frequency or severity of any existing violation of any standard in any area; or
> (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.
>
> The determination of conformity shall be based on the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel and congestion estimates as determined by the metropolitan planning organization or other agency authorized to make such estimates.

In November 1993, the U.S. Department of Transportation (USDOT) and USEPA developed guidance for determining conformity of transportation plans, programs, and projects. This guidance is denoted as the Transportation Conformity Rule (40 C.F.R. §§ 51.390 and 40 C.F.R. §§ 93.100-129).

The metropolitan planning organization responsible for the preparation of regional transportation

plans and the associated air quality analyses is SCAG. The current applicable regional transportation plan is the Federal Statewide Transportation Improvement Program (FSTIP). The most recently approved FSTIP is the 2011 Final Statewide Transportation Improvement Program, Covering Federal Fiscal Years 2010/11 through 2013/14 (Caltrans 2011). A proposed project needs to be identified in the FSTIP to conform to the SIP.

The proposed project is included within the Federal State Transportation Improvement Program under grouped projects for safety improvements – HSIP program projects consistent with 40 CFR Part 93.126 Tables 2 and 3 Categories – Railroad/Highway Crossing, Safer on-Federal-Aid system roads, shoulder improvements, traffic control devices and operating assistance other than signalization projects, intersection signalization projects at individual intersections, pavement marking demo. The Project is included in Amendment 9 of the FSTIP (an administrative modification), which was approved by SCAG on June 8, 2011, and approved by the state on June 10, 2011. Since administrative modifications do not require FHWA approval, the state adopted Amendment 9 in the FSTIP. The Project is an intersection signalization project at an individual intersection. The Project is also listed in the SCAG Federal Transportation Improvement Program (FTIP) as Project SCAG015. The 2011 FTIP received federal approval on December 14, 2010.

The project listings are in Section 5.1 of this report.

CHAPTER 4.0
EXISTING CONDITIONS

4.1 ENVIRONMENTAL SETTING, CLIMATE, AND METEOROLOGY

The project is located in Imperial County. Imperial County is a desert community with a warm, dry climate. Summers are extremely hot and dry while winters are temperate. The mean monthly temperature ranges from 55-90 degrees with annual rainfall of less than three inches. One of the main determinants of the climatology is a semipermanent high pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low pressure storms are brought into the region, causing widespread precipitation. In Imperial County, the months of heaviest precipitation are November through April, averaging about 9 to 14 inches annually. The mean temperature is 74.6 degrees Fahrenheit (°F) and the mean maximum and mean minimum temperatures are 88.8°F and 56.5°F, respectively (WRCC 2009).

4.2 REGIONAL AND LOCAL AIR QUALITY

Specific geographic areas are classified as either "attainment" or "nonattainment" areas for each pollutant based on the comparison of measured data with federal and state standards. If an area is redesignated from nonattainment to attainment, the federal CAA requires a revision to the SIP, called a maintenance plan, to demonstrate how the air quality standard will be maintained for at least 10 years. The Transportation Conformity Rule, 51 CFR 390-464, classifies an area required to develop a maintenance plan as a maintenance area.

Imperial County currently meets the federal standards for all criteria pollutants except O_3, $PM_{2.5}$, and PM_{10}. On April 15, 2004, the USEPA issued the initial designations for the 8-hour O_3 standard, and Imperial County is classified as moderate nonattainment. The APCD was required to submit an air quality plan to the USEPA in 2008; the plan demonstrates how the 8-hour O_3 standard will be attained by 2009 (ICAPCD 2009). Imperial County has also developed a SIP for the PM_{10} standard. Imperial County is in the process of developing a SIP for the $PM_{2.5}$ standard.

For the California standards, Imperial County is currently classified as a nonattainment area for

O_3, and a nonattainment area for $PM_{2.5}$ and PM_{10} (ARB 2012a). Ambient air pollutant concentrations in Imperial County are measured at seven air quality monitoring stations operated by the APCD. The APCD air quality monitoring station that represents the project area, climate, and topography in Imperial County is the El Centro Monitoring Station, located on 9th Street in El Centro. This station monitors CO, NO_X, O_3, PM_{10}, and $PM_{2.5}$. Table 4 summarizes the excesses of standards and the highest pollutant levels recorded at these stations for the years 2008 to 2010.

Table 4
Ambient Air Quality Summary – El Centro 9th Street Monitoring Station

Pollutant Standards	2008	2009	2010
Carbon Monoxide (CO)			
Maximum 8-hour concentration (ppm)	1.71	3.20	5.61
Number of Days Standard Exceeded			
NAAQS 1-hour (≥35 ppm)	0	0	0
CAAQS 8-hour (≥20 ppm)	0	0	0
NAAQS 8-hour (≥9 ppm)	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.081	0.122	0.141
Annual Average (ppm)	0.009	0.008	0.004
Number of Days Standard Exceeded			
CAAQS 1-hour	0	0	0
NAAQS 1-hour	0	0	0
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.135	0.111	0.122
Maximum 8-hour concentration (ppm)	0.084	0.085	0.082
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	4	9	3
CAAQS 8-hour (>0.070 ppm)	9	30	29
NAAQS 8-hour (>0.075 ppm)	2	11	10
Particulate Matter (PM_{10}) [b]			
National maximum 24-hour concentration ($\mu g/m^3$)	88.2	243.1	69.4
National second highest 24-hour concentration ($\mu g/m^3$)	59.2	161.1	57.0
State maximum 24-hour concentration ($\mu g/m^3$)	88.7	233.7	55.9
State second highest 24-hour concentration ($\mu g/m^3$)	57.2	152.9	54.2
National[c] annual average concentration ($\mu g/m^3$)	32.7	49.9	32.9
State[d] annual average concentration ($\mu g/m^3$)	32.9	47.9	*
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 $\mu g/m^3$)	0	2	0
CAAQS 24-hour (>50 $\mu g/m^3$)	4	17	5
Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration ($\mu g/m^3$)	26.7	37.7	19.9
Second highest 24-hour concentration ($\mu g/m^3$)	17.8	21.8	17.0
Third highest 24-hour concentration ($\mu g/m^3$)	17.0	17.9	13.4
Fourth highest 24-hour concentration ($\mu g/m^3$)	16.2	17.9	12.8
National[c] annual average concentration ($\mu g/m^3$)	*	7.9	6.5
State[d] annual average concentration ($\mu g/m^3$)	*	8.0	6.6
Number of Days Standard Exceeded			
NAAQS 24-hour (>35 $\mu g/m^3$)	0	1	0

Notes:
* Data Unavailable
[b] Measurements usually collected every six days.
[c] National annual average based on arithmetic mean.
[d] State annual average based on geometric mean.

Source: ARB 2012b

This page intentionally left blank.

CHAPTER 5.0
FUTURE AIR QUALITY AND IMPACTS

5.1 LONG-TERM EMISSIONS

The project is in a federal nonattainment area for O_3 and PM_{10} and is not exempt from Transportation Conformity requirements. The Metropolitan Planning Organization is SCAG.

Procedures and guidelines for use in evaluating the regional and potential local-level CO impacts of a project are contained in Transportation Project-Level Carbon Monoxide Protocol (the Protocol) (UCD ITS 1997). The Protocol provides a methodology for determining the level of analysis, if any, required on a project. The guidelines comply with the federal CAA, federal and state conformity rules, the National Environmental Policy Act, and the California Environmental Quality Act (CEQA).

Regional Air Quality

On April 15, 2004, the USEPA designated Imperial County as a moderate nonattainment for the new 8-Hour O_3 standard. This designation took effect on June 15, 2004. Imperial County is also a serious nonattainment area for the NAAQS for PM_{10}. The Final Transportation Conformity Rule Amendments for the new 8-hour O_3 and $PM_{2.5}$ NAAQS required that conformity of the RTP and the RTIP for nonattainment areas be determined to the 8-Hour O_3 standard by June 15, 2005.

The SCAG Board approved Amendment 9 of the FSTIP on June 8, 2011. The Project is included in Amendment 9 of the FSTIP (an administrative modification), which was approved by SCAG on June 8, 2011, and approved by the state on June 10, 2011. Since administrative modifications do not require FHWA approval, the state adopted Amendment 9 in the FSTIP. The Project is an intersection signalization project at an individual intersection.

The project is identified as SCG015, Grouped Projects for Safety Improvements. The design concept and scope of the proposed project is consistent with the project description in the 2011 FSTIP, through Amendment 9, and the assumptions in SCAG's regional emissions analysis.

The Project is also listed in the SCAG Federal Transportation Improvement Program (FTIP) as Project SCAG015. The 2011 FTIP received federal approval on December 14, 2010.

Regional Impacts. The Protocol contains a conformity requirement decision flow chart for new projects that is designed to assist in the evaluation of the requirements that apply to the project. The flow chart contained in the Protocol was followed to determine the level of analysis required for the Project. The steps in the analysis are as follows:

> **Step 3.1.1: Is this project exempt from all emissions analyses? No.** The project is a signalization project and is not listed in Table 3 of 40 CFR 93.126. The project was therefore determined not to be exempt from all emissions analyses.
> **Step 3.1.2: Is project exempt from regional emissions analyses? Yes.** The project falls under the category of exempt projects (intersection signalization projects at individual intersections) listed in Table 3 of 40 CFR 93.127.

No regional impact analysis is therefore required.

Local Air Quality ("Hot Spots")

Carbon Monoxide

The Transportation Conformity Rules require a statement that:

> federal projects must not cause or contribute to any new localized CO violations or increase the frequency or severity of any existing CO violations in CO nonattainment and maintenance areas.

The CO portion of the requirement does not apply to the proposed project because Imperial County is a federal CO attainment area.

PM_{10} and $PM_{2.5}$

On March 10, 2006, the USEPA published a final rule that establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in $PM_{2.5}$ and PM_{10} nonattainment and maintenance areas. Based on that rule, the USEPA and FHWA published *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (PM Guidance) (FHWA 2006).

A hot spot analysis is defined in 40 CFR 93.101 as an estimation of likely future localized $PM_{2.5}$ or PM_{10} pollutant concentrations and a comparison of those concentrations to the relevant air quality standards. A hot spot analysis assesses the air quality impacts on a scale smaller than an entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals. Such an analysis is a means of demonstrating that a transportation project meets CAA conformity requirements to support state and local air quality goals with respect to potential localized air quality impacts. When a hot spot analysis is required, it is included within the project-level conformity determination that is made by the FHWA or FTA.

The PM Guidance describes qualitative hot spot analyses. Quantitative $PM_{2.5}$ and PM_{10} hot spot analyses will be required when appropriate methods and modeling guidance are available. Qualitative hot spot analyses involve more streamlined reviews of local factors such as local monitoring data near a proposed project location.

Projects of Air Quality Concern

To meet statutory requirements, the March 10, 2006, final rule requires $PM_{2.5}$ and PM_{10} hot spot analyses to be performed for "projects of air quality concern." Qualitative hot spot analyses would be done for these projects. Projects not identified as projects of air quality concern (POAQC) are considered to meet statutory requirements without any further hot spot analyses.

The PM Guidance defines POAQC as projects within a federally designated $PM_{2.5}$ or PM_{10} nonattainment or maintenance area, funded or approved by the FHWA or FTA, and one of the following types of projects:

- New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;
- Projects affecting intersections that are LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F, because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- New bus and rail terminals, and transfer points, that have a significant number of diesel vehicles congregating at a single location;
- Expanded bus and rail terminals, and transfer points, that significantly increase the number of diesel vehicles congregating at a single location; and

- Projects in, or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Appendix A of the PM Guidance contains examples of POAQC and examples of projects that are not an air quality concern. Under the example of POPAQC, a significant volume for a new highway or expressway is defined as facilities with an annual average daily traffic (AADT) volume of 125,000 or more, and a significant number of diesel vehicles is defined as 8 percent or more of the total AADT is diesel truck traffic.

The Aten Road and Dogwood Road Signalization Project would not be a project of air quality concern for $PM_{2.5}$ and PM_{10} emissions because the project would not result in increases in the number of diesel vehicles utilizing the area, does not involve intersections that are operating at LOS D, E, or F with a significant number of diesel vehicles, does not involve a new or expanded bus or rail terminal, and would not affect a location or category of site which are identified in the PM_{10} applicable implementation plan as sites of violation or possible violation. While the entire County of Imperial is classified as a nonattainment area for the NAAQS for PM_{10}, the APCD has identified windblown fugitive dust from open areas, agricultural fields, and unpaved roads as the main sources of the exceedances of the PM_{10} standards; thus violations are not attributable to traffic and paved roads in developed areas would not affect a location or category of site that would contribute to violations of the PM_{10} standard. $PM_{2.5}$ exceedances of the CAAQS are identified in the Calexico area only.

Mobile Source Air Toxics

The following discussion is based on the FHWA Memorandum, Subject: INFORMATION: Interim Guidance on Air Toxic Analysis in NEPA Documents, dated February 3, 2006. The purpose of the guidance is to advise when and how to analyze MSAT in the NEPA process for highways. This guidance is interim, because MSAT science is still evolving. As the science progresses, FHWA will update the guidance.

The purpose of this project is improve safety at the intersection of Aten Road and Dogwood Road. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. To address the potential for MSAT concerns, the Federal Highway Administration (FHWA) *Interim Guidance on Air Toxic Analysis in NEPA Documents* (FHWA 2006) was followed. The Aten Road and Dogwood Road signalization project falls under Category 1, projects with no potential for meaningful MSAT effects. Category

(1) is limited to projects that:

- qualify as a categorical exclusion under 23 CFR 771.117(c);
- are exempt under the Clean Air Act conformity rule under 40 CFR §93.126; or
- have no meaningful impacts on traffic volumes or vehicle mix.

USEPA currently recommends following the March 2007 report entitled "Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the NEPA Process". FHWA recognizes that FHWA and USEPA are currently undergoing mediation on the FHWA Interim Guidance. FHWA will commit to performing the quantitative assessment utilizing the methodology agreed upon as a result of the mediation process. Evaluating the environmental and health impacts from MSATs on a proposed highway project may involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs. Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of USEPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The USEPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The USEPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at http://www.epa.gov/iris.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health

implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes -- particularly respiratory problems (South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 Studies on the relationship between health and air quality); NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein).

Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants.

Because the Aten Road and Dogwood Road Signalization Project would fall under Category 1, no analysis of MSATs is required and no MSAT impacts would result.

5.2 CONSTRUCTION IMPACTS

Regional Emissions

The principal criteria pollutants emitted during construction would be PM_{10} and $PM_{2.5}$. The source of the pollutants would be fugitive[1] dust created during clearing, grubbing, excavation, and grading; demolition of structures and pavement; vehicle travel on paved and unpaved roads; and material blown from unprotected graded areas, stockpiles, and haul trucks. Generally, the distance that particles drift from their source depends on their size, emission height, and wind speed. About 50 percent of fugitive dust is made up of relatively large particles, greater than 100 microns in diameter. These particles are responsible for the reduced visibility often associated with construction, as well as the nuisance caused by the deposition of dust on vehicles, and in exterior areas used by people for recreation and business. Given their relatively large size, these particles tend to settle within 20 to 30 feet of their source. Small particles, less than 100 microns in diameter, can travel nearly 330 feet before settling to the ground, depending on wind speed. These smaller particles also contribute to visibility and nuisance impacts, and include PM_{10} and $PM_{2.5}$, which are potential health hazards.

An additional important source of pollutants during construction would be the engine exhaust

[2] "Fugitive" is a term used in air quality analysis to denote emission sources that are not confined to stacks, vents, or similar paths.

from construction equipment. The principal pollutants of concern would be NO_X and ROG emissions that would contribute to the formation of O_3, which is a regional nonattainment pollutant.

Federal conformity regulations require analysis of construction impacts for projects when construction activities will last for more than 5 years. The proposed project would be complete in 2014 and last less than 5 years; therefore, no quantitative estimates of regional construction emissions have been made. However, it is recommended that specific measures to control dust and particulates be incorporated into project specifications. These measures are identified in Chapter 6.0.

Local Emissions

According to 40 CFR § 93.123 (5), CO, PM_{10}, and $PM_{2.5}$ hot spot analyses are not required for construction-related activities that create a temporary increase in air emissions. Temporary is defined as increases that only occur during a construction phase and last 5 years or less at any individual site. The construction phase of the proposed project would last for approximately 2 years and would be considered temporary. Thus, no local hot spots are anticipated and a hot spot analysis is not required for construction of the proposed project.

Diesel particulate emissions may be a potential concern, as described in Section 2.8 of this report. While there is no formal guidance for impact analysis, potential adverse impacts would be increased if construction equipment and truck staging areas were to be located near schools, active recreation areas, or areas of higher population density. The nearest schools are all located more than a mile from the intersection. Because no sensitive receptors are located near the intersection, no mitigation is required.

5.3 CUMULATIVE IMPACTS

The analysis of project impacts to regional air quality, as performed by SCAG and the APCD in conjunction with the RTP and RTIP process, is a cumulative analysis. The proposed project would conform to the assumptions in the air quality conformity analyses for the 2011 FSTIP, and the 2011 FTIP, which are the long-range planning documents that include roadway projects throughout the region. Therefore, the project would not result in a cumulative impact to air quality.

This page intentionally left blank.

CHAPTER 6.0
POLLUTION ABATEMENT MEASURES

Most of the construction impacts to air quality are short-term in duration and, therefore, will not result in long-term adverse conditions. Implementation of the following measures, some of which may also be required for other purposes such as storm water pollution control will reduce any air quality impacts resulting from construction activities:

The construction contractor shall comply with Caltrans' Standard Specifications in Section 14(2010).

- Section 14-9.01specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
- Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.
    - Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emission or at the right of way line, depending on local regulations.
    - Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas.
    - Wash off trucks as they leave the right-of-way as necessary to control fugitive dust emissions.
    - Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.
    - Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize

construction impacts to existing communities.

- Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.
- Establish Environmentally Sensitive Areas (ESAs) or their equivalent near sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited, to the extent feasible.
- Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.
- Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation.
- Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.
- Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads.
- Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues, and may need to use controls such as dampened straw.

CHAPTER 7.0
REFERENCES

California Air Resources Board. 1998. *Final Carbon Monoxide Redesignation and Maintenance Plan for Ten Federal Planning Areas*.

California Air Resources Board. 2000a. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.*

California Air Resources Board. 2000b. *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines.*

California Air Resources Board. 2012a. Area Designations. http://www.arb.ca.gov/desig/desig.htm

California Air Resources Board. 2012b. Air Quality Summaries, http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start

California Air Resources Board. 2012c. Current Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

California Department of Conservation. 2000. *A General Location Guide for Ultramafic Rocks in California-Area Likely to Contain Naturally Occurring Asbestos*.

California Department of Transportation. 2007. *Standard Environmental Reference. Chapter 11 – Air Quality.* October.

Environmental Law Institute. 2005. *NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles*, 35 ELR 10273.

Federal Highway Administration. 2006. *Interim Guidance on Air Toxic Analysis in NEPA Documents*. February 3.

Federal Highway Administration. 2009. *Interim Guidance Update on Air Toxic Analysis in NEPA Documents*. September 30.

Imperial County Air Pollution Control District. 2009. *Ozone SIP and Final Draft PM10 2009 SIP*. http://www.co.imperial.ca.us/AirPollution/Web%20Pages/Current%20SIP%20Chapters.htm

Sierra Club. 2004. *Highway Health Hazards*.

South Coast Air Quality Management District. 2000. *Multiple Air Toxic Exposure Study-II*.

Southern California Association of Governments. 2010. *Final 2011 Federal Transportation Improvement Program*. September 2.

Southern California Association of Governments. 2011. *Administrative Modification #11-09 to the 2011 Federal Transportation Improvement Program (FTIP)*. June 8.

USEPA. 1996. *EPA Takes Final Step in Phase-Out of Leaded Gasoline.* http://www.epa.gov/history/topics/lead/02.htm

USEPA. 2006. *Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*. March.

University of California Davis. 1997. *Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol*.

Attachment

FSTIP and FTIP Project Listings

2011 FEDERAL TRANSPORTATION IMPROVEMENT PROGRAM Various Counties Administrative Modification #11-09 June 2011 *(in $000's)*				
Agency	Project ID	Title	Changes Requested	Amendment Reason
Local Highways				
Various Agencies	SCAG015	GROUPED PROJECTS FOR SAFETY IMPROVEMENTS - HSIP PROGRAM PROJECTS CONSISTENT WITH 40 CFR PART 93.126.TABLES 2 & 3 CATEGORIES - ...	Cost Decrease HSIP Funds ►Decrease HSIP in FY 10/11 from $14,219 to $13,149 ►Decrease HSIP in FY 11/12 from $33,565 to $26,799 ►Decrease HSIP in FY 12/13 from $29,066 to $26,999 ►Decrease HSIP in FY 13/14 from $12,214 to $12,070 City Funds ►Increase City funds in FY10/11 from $2,813 to $2,860 ►Decrease city funds in FY 11/12 from $7,162 to $6,206 ►Decrease City funds in FY 12/13 from $14,365 to $14,226 ►Increase City funds in FY 13/14 from $4,262 to $5,192 Total Project Cost increased from $118,983 TO $110,158.	UPDATED CONSISTENT WITH CALTRANS REQUEST TO UPDATE PER REVISED 5/31/2011 LISTINGS.
Various Agencies	SCAG016	GROUPED PROJECTS FOR SAFETY IMPROVEMENTS - SAFE ROUTES TO SCHOOL PROGRAM (SRTS) PROJECTS CONSISTENT WITH 40 CFR PART 93.126.TABLES 2 & 3 CATEGORIES - ...	Cost Decrease HSIP Funds ►Decrease SRTS in FY 10/11 from $5,960 to $5,411 ►Decrease SRTS in FY 11/12 from $13,268 to$9,678 ►Decrease SRTS in FY 12/13 from $6,356 to $5,560 Agency Funds ►Add agency funds in FY11/12 of $1,329 ►Add agency funds in FY12/13 of $ 652 Total Project Cost decreased from $26,170 to $23,549.	UPDATED CONSISTENT WITH CALTRANS REQUEST TO UPDATE PER REVISED 5/31/2011 LISTINGS.

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

2011 Federal Transportation Improvement Program

Administrative Modification #11-09
Various Counties
Local Highways
Project Listing Report
Cost in Thousands

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
SCAG015	Various	Various		REG0701	LUM03				L	EXEMPT - 93.126	9
Description:							PTC	120,985	Agency	VARIOUS AGENCIES	

GROUPED PROJECTS FOR SAFETY IMPROVEMENTS - HSIP PROGRAM PROJECTS CONSISTENT WITH 40 CFR PART 93.126.TABLES 2 & 3 CATEGORIES - RAILROAD/HIGHWAY CROSSING, SAFER ONO-FEDERAL-AID SYSTEM ROADS, SHOULDER IMPROVEMENTS, TRAFFIC CONTROL DEVICES & OPERATING ASSISTANCE OTHER THAN SIGNALIZATION PROJECTS, INTERSECTION SIGNALIZATION PROJECTS AT INDIVIDUAL INTERSECNS, PAVEMENT MARKING DEMO

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
HIGHWAY SAFETY IMPROVEMENT PROGRAM			81,161	81,161	2,144	13,149	26,799	26,999	12,070			81,161
CITY FUNDS			28,997	28,997		3,373	6,206	14,226	5,192			28,997
SCAG015 Total			110,158	110,158	2,144	16,522	33,005	41,225	17,262			110,158

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
SCAG016	Various	Various		REG0701					L	EXEMPT - 93.126	9
Description:							PTC	26,170	Agency	VARIOUS AGENCIES	

GROUPED PROJECTS FOR SAFETY IMPROVEMENTS - SAFE ROUTES TO SCHOOL PROGRAM (SRTS) PROJECTS CONSISTENT WITH 40 CFR PART 93.126 EXEMPT TABLES 2 AND TABLE 3 CATEOGRIES - RAILROAD/HWY CROSSING, SAFER NON-FEDERAL-AID SYSTEM RDS, SHOULDER IMP, TRAFFIC CONTROL DEVICES , INTERSECTIPN SIGNALIZATION & INDIVIDUAL INTERSECTIONS, PAVEMT MARKING DEMO.

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
SAFE ROUTE TO SCHOOLS			21,568	21,568	919	5,411	9,678	5,560				21,568
AGENCY		1,981		1,981			1,329	652				1,981
SCAG016 Total		1,981	21,568	23,549	919	5,411	11,007	6,212				23,549
Grand Total		1,981	131,726	133,707	3,063	21,933	44,012	47,437	17,262			133,707

Final 2011 Federal Transportation Improvement Program

Various Counties Project Listing
Local Highway
Cost in Thousands

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
SCAG014	Various	Various		REG0701	NCNH2				L	EXEMPT - 93.126	0
Description:							PTC	3,708	Agency	VARIOUS AGENCIES	

GROUPED PROJECTS FOR SAFETY IMPROVEMENTS ON HIGH RISK RURAL ROAD - HRRR PROGRAM - (PROJECTS ARE CONSISTENT WITH 40 CFR PART 93.126 EXEMPT TABLES 2 & 3 CATEGORIES - SAFER NON-FEDERAL-AID SYSTEM ROADS.

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
HIGH RISK RURAL ROAD PROGRAM			2,357	2,357	144		1,457	756				2,357
SCAG014 Total			2,357	2,357	144		1,457	756				2,357

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
SCAG015	Various	Various		REG0701	LUM03				L	EXEMPT - 93.126	0
Description:							PTC	77,419	Agency	VARIOUS AGENCIES	

GROUPED PROJECTS FOR SAFETY IMPROVEMENTS - HSIP PROGRAM PROJECTS CONSISTENT WITH 40 CFR PART 93.126.TABLES 2 & 3 CATEGORIES - RAILROAD/HIGHWAY CROSSING, SAFER ONO-FEDERAL-AID SYSTEM ROADS, SHOULDER IMPROVEMENTS, TRAFFIC CONTROL DEVICES & OPERATING ASSISTANCE OTHER THAN SIGNALIZATION PROJECTS, INTERSECTION SIGNALIZATION PROJECTS AT INDIVIDUAL INTERSECNS, PAVEMENT MARKING DEMO

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
HIGHWAY SAFETY IMPROVEMENT PROGRAM			55,263	55,263	1,609	14,850	16,425	22,379				55,263
CITY FUNDS			21,318	21,318		3,870	4,040	13,408				21,318
SCAG015 Total			76,581	76,581	1,609	18,720	20,465	35,787				76,581

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
SCAG016	Various	Various		REG0701					L	EXEMPT - 93.126	0
Description:							PTC	25,828	Agency	VARIOUS AGENCIES	

GROUPED PROJECTS FOR SAFETY IMPROVEMENTS - SAFE ROUTES TO SCHOOL PROGRAM (SRTS) PROJECTS CONSISTENT WITH 40 CFR PART 93.126 EXEMPT TABLES 2 AND TABLE 3 CATEOGRIES - RAILROAD/HWY CROSSING, SAFER NON-FEDERAL-AID SYSTEM RDS, SHOULDER IMP, TRAFFIC CONTROL DEVICES , INTERSECTIPN SIGNALIZATION & INDIVIDUAL INTERSECTIONS, PAVEMT MARKING DEMO.

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
SAFE ROUTE TO SCHOOLS			25,828	25,828	586	5,618	13,268	6,356				25,828
SCAG016 Total			25,828	25,828	586	5,618	13,268	6,356				25,828
Grand Total			104,766	104,766	2,339	24,338	35,190	42,899				104,766